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**CARBAMIDE DEPARAFFINATION OF OIL
FRACTIONS**

by A.B.Tetoryan, L.N.Kupriyanova,
D.V.Ivanyukov, V.G.Nikolayeva and
G.M.Mitrofanov

, (Section III)

Data are analyzed on carbamide deparaffination of diesel and oil fractions, use being made of various activators and solvents. A comparison is made of the quality of diesel fuels obtained in carbamide and low-temperature deparaffination, and questions of refining paraffins obtained in carbamide deparaffination of oil fractions are dealt with. Data are also given on operating a process unit for carbamide deparaffination of oil fractions.

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PRINCIPAL REGULARITIES OF HIGH-TEMPERATURE
THERMAL AND CATALYTIC PYROLYSIS OF HYDRO-
CARBONS IN MOLTEN METALS AND A FREE VOLUME

by A.V.Topchiev, Y.M.Paushkin,
A.T.Nepryakhina, T.P.Vishnyakova
and A.A.Ananiev

(Section IV)

A study has been made of the pyrolysis of individual hydrocarbons and oil fractions at high temperatures of 700-1000°C in a free volume and with water vapour, as well as in molten metals, such as aluminium, magnesium and sodium, and with a number of catalysts.

Regularities have been revealed of the transformation of hydrocarbons at high temperatures, as well as the special part played by molten metals reacting to hydrocarbon radicals during pyrolysis. Conditions have also been established for obtaining ethylene and propylene with a high yield of petroleum-chemical synthesis.

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COMPOSITION OF SULFUR- AND NITROGEN-
ORGANIC COMPOUNDS CONTAINED IN THE
OILS OF THE EASTERN AREAS IN THE
SOVIET UNION

by R.D.Obolentsov, G.D.Malpern,
B.V.Aivazov, N.K.Besinger,
E.K.Karaulova, V.G.Lukyanitsa,
A.A.Ratovskaya and V.D.Timofeyev

(Section V)

The paper outlines the methods of group analysis of sulfur- and nitrogen-organic compounds, elaborated by the Bashkir Branch and the Petroleum Institute of USSR Academy of Sciences. The group composition is given of sulfur- and nitrogen-organic compounds of benzene-kerosene-solar distillates and of some oils of the eastern areas in the USSR.

A description is given of the methods for isolating and identifying sulfur- and nitrogen-organic compounds to be found in oil fractions, as well as of sulfur-organic compounds identified in some distillates of the oils in the Bashkir and Tatar Republics of the USSR.

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**INVESTIGATIONS OF DIRECT OIL-
FINDING METHODS**

by V.A. Solov'ev, F.A. Alekseyev, E.A. Gurov,
A.A. Hoshchyan, G.A. Mogilevsky, V.M. Nizhnik,
B.P. Yasenev

(Section I)

The paper contains theoretical and experimental data on direct oil-and gas-finding methods and their practical application.

A description is given of the techniques of gas survey, gas-bacterial and other geochemical survey, of radiometric survey and of gas logging. The anomalies so obtained are described, and their interpretation is given as well as material on improving the methods.

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RHEOLOGY OF LUBRICANTS AND OILS

by G.V. Vinogradov

(Section V)

The results of research carried out in the last 10 years are analyzed in the light of recent investigations, and for the first time a general conception has been outlined of the rheological properties and structure of lubricants and oils.

Data are given on studying the resilience properties, the shearing strength, viscosity, wall sliding, and the polarization-optical and dielectric properties during the flow. The connection is also analyzed between the geological properties of lubricants and their behaviour in anti-friction bearings.

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PHYSICO-CHEMICAL AND TECHNOLOGICAL
INVESTIGATIONS OF MUD FLUIDS USED
FOR DRILLING WELLS

by K.F.Zhigach, P.A.Rebinder, N.W.Serp-
Serbina, I.B.Adal, L.K.Mukhin, M.I.Pol-
stein, V.N.Demishev and E.G.Kister

(Section II)

Regularities and the mechanism of various structures formed during coagulation within dispersion systems have been determined, which make it possible to control the basic technological properties of mud fluids used in drilling operations.

A study has been made of the rheology and the elastic, plastic and rheological properties of various mud fluids.

The paper also deals with the application of various mud fluids and reagents to control their colloidal and chemical properties when drilling wells in difficult formations of the USSR oilfields.

A description is given of mud fluids used for drilling-in and hydraulic rupture of oil-bearing beds.

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**PRINCIPAL REGULARITIES IN THE DISTRIBUTION
OF OIL AND GAS ACCUMULATIONS THROUGHOUT
THE WORLD**

by M.F.Mirchink, I.O.Brak,
V.G.Levinson, V.G.Ushakov,
I.V.Vysotsky and V.D.Olenin

(Section I)

The regularities in the world distribution of oil and gas accumulations can be revealed by examining them on the map. The latter indicates that oil and gas accumulations are confined to large areas of the earth's crust sagging. These represent closed artesian basins which may also be considered as oil and gas basins.

It can be seen from the map (scale 1:25,000,000) that all the large closed areas of the earth's crust sagging may be classified into three groups.

1. Oil and gas basins confined to depressions within platform areas.
2. Oil and gas basins confined to foothill troughs of present-day folded mountains.
3. Oil and gas basins confined to inter-mountain areas.

Each of the oil and gas basins is made up of thick sedimentary formations of different ages with well-pronounced regional oil beds, some of which may also be

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regarded as source rocks.

Oil and gas occur in every basin in regular succession to water saturating highly permeable rocks. Oil and gas accumulations form oil and gas zones confined to either anticlinal zones or to those of the stratigraphic type.

The stratigraphic range of oil and gas occurrence in every zone in question depends on the lithological characteristics of the rocks composing the portion of the basin to which the above zones and their distributive provinces are related.

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HYDRAULIC CHARACTERISTICS OF POROUS RESERVOIRS

by **F.A.Trebin and G.F.Trebin**

(Section II)

The flow of liquids and gases through porous media has been studied in the case of many diverse reservoirs. According to experimental as well as theoretical data, the critical Reynold's number for porous media approximate 0.2. All the results were analyzed with the aid of a specially derived equation valid for porous rock as well as for single pipes of any configuration.

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**INDUSTRIAL METHODS OF BUILDING
OIL TANKS IN THE SOVIET UNION**

by E.A. Ignatchenko, G.M. Zolotarev
and B.V. Popovskiy

(Section VIII)

An original method of building welded cylindrical oil tanks has been developed in the Soviet Union.

The tank bottom and walls are pre-fabricated, automatically welded and then wrapped into multi-layer rolls easy to transport. The roofing is manufactured as sheets.

The erection of the tanks formed of large blocks is quite simple and considerably reduces the construction schedule. The method provides for high quality and reliability in operation.

The same original method can also be applied to building tanks of other types.

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**ELECTRICAL MODEL STUDIES AND PREDICTION
OF OILFIELD DEVELOPMENT**

**by P.M.Belash, A.F.Krylov
and M.I.Maximov**

(Section II)

Field data on reservoir pressure and recovery were used in reproducing the history of field development on electrical models. Reservoir parameters and directions of flow between the reservoirs were defined.

Models reproducing the development processes permitted to predict further development with different rates of injection, to ascertain rates of flow of productive wells, reservoir pressures, contour displacement, and solve other problems of reservoir engineering.

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MATHEMATICAL THEORY AND ELECTRICAL MODEL
STUDY OF A DEEP-WELL PUMP

by A.G. Babukov, A.S. Virmovskiy
and O.S. Tasheishvili

(Section II)

The problem of dynamics of a deep-well pump has been studied in a most general way in the first part of the paper (A.G. Babukov). The solutions so derived may serve as a basis for programming computers.

The second part of the paper (A.S. Virmovskiy) deals with simple approximate solutions of dynamic problems of a deep-well pump.

The paper also describes an electrical model of a deep-well pump constructed in the USSR.

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